CDF Operations Report

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8-DEC-2003

All Experimenters' Meeting

STORE SUMMARY

Start Date	Store	Duration (hours)	Inst Lum Initial e30 cm-2 s-1	Int. Lum Delivered nb-1	Live Lum nb-1	Eff.	Comment
Mo 12/1	3057	6.5	22.5	413	298	72%	BAD abort
Th 12/4	3080	2.0	21.6	141	8.2	6%	No Sili.
Th 12/4	3083	16.9	18.4	662	500	76%	No Sili.
Total		25.4		1212	806	66%	

Notes:

Store 3057 (reported last week): Store dropped due to faulty interlock. Abort was not clean and silicon detectors took a large radiation dose. CDF decides to keep silicon off until Tevatron abort kicker is re-commissioned.

Store 3080: Short store with low efficiency due to bad TDC card. Silicon off.

Store 3083: Silicon off but proton losses at CDF look good and Tevatron believes abort kicker is fixed. Hoping for clean drop of 3083 after scans to commission collimator at A48… You know the rest of the story.

CDF Issues

- "2 shift" Access 12/6-12/7
  - One quadrant of COT stereo SL7 recovered by disabling cell 86. (Work required east plug to be pulled for access to bore.) Repair was successful but still needs to be tested with collisions.
  - Long list of smaller problems fixed in the collision hall.
  - Did not pull west toroids so that quads could be surveyed so we still have a few "small" problems that need access. Will take care of these this week.
- Silicon
  - Silicon detectors were off after damaging abort last week.
  - Powered silicon up after 12/6-7 access and system ran stably with cosmics Saturday night through Monday.
  - Will pull east plug this week and attempt to recover a silicon ladder and eliminate a hole in SVT (**Silicon Vertex Trigger**.) [not new – just not enough time on 12/6-7]

Issues

- Accelerator Division is investigating possibilities for lowering the intersection point at CDF. (reduces silicon inner layer (L00) aging due to radiation damage, increase L00 efficiency, keep SVT working)
- Working to review/update procedures to allow us to turn silicon back on when collisions return.

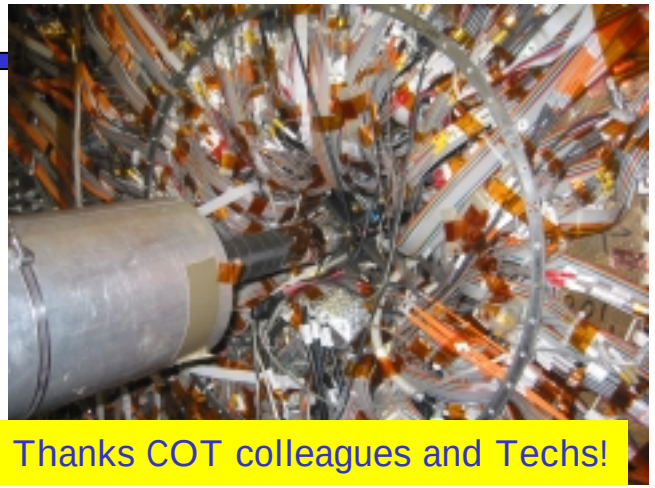
Conclusions

- CDF detector was in very good shape after the access on Saturday and hopes that repairs and recovery of Tevatron go quickly. Other than silicon work in east bore, we will limit scope of work over this week's shutdown to keep CDF detector in good working condition.

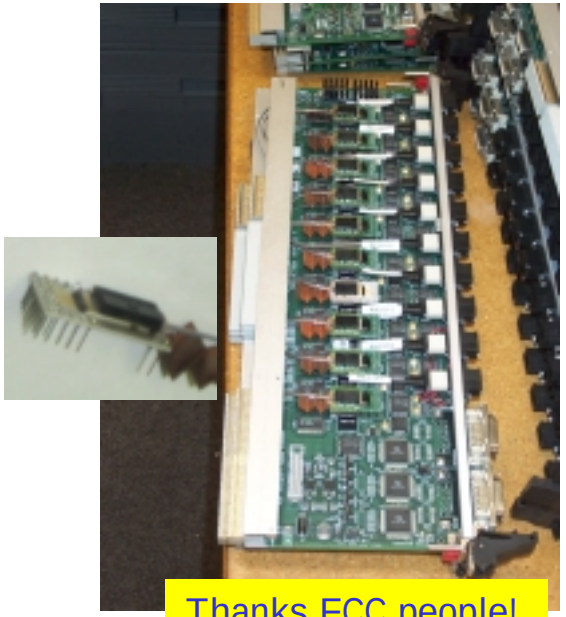
(Some) Projects tackled this Shutdown

- **Infrastructure laid out for separate silicon inert gas volume ('Sili Baggy')**
  - Will increase longevity of SVX by avoiding thermal cycles during shutdowns
  - Will mitigate reverse annealing - need to lower detector temperature to get full benefit
  - 'foaming over DOIM' connectors still needs risk assessment
- **~ 500 optical (RX) receivers gold-pinned to improve power lines**
  - Needed to touch all crates – one crate took a long time to get back to pre-shutdown status
  - Will hopefully reduce # of controlled accesses during data taking
- **2SRC running is the default r/o scheme**
  - Some residual snags in the SRC firmware still need ironing out but operation OK
- **Commissioned the 'E-String'**
  - Detects synchronous trigger conditions and lets SRC pull 'Fatal Error' in Run Control
- **Closed the book on ISL cooling – no (further) success**
  - 11/12 is the 'final' count of operational cooling lines - 3% of ISL remain lost.

+ several improvements in monitoring, optical fiber swaps etc.



Thanks COT colleagues and Techs!

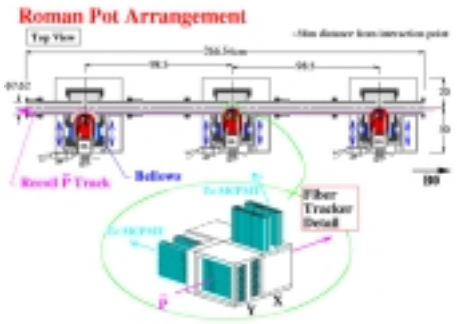


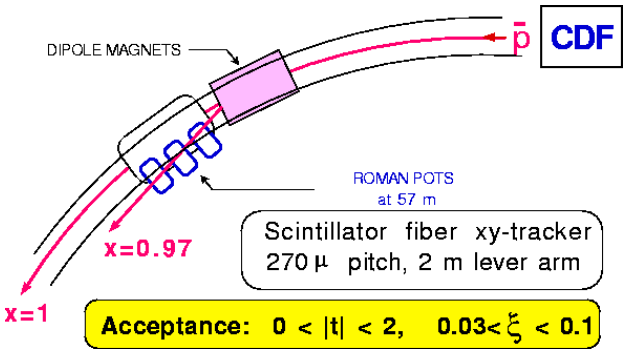
Thanks FCC people!

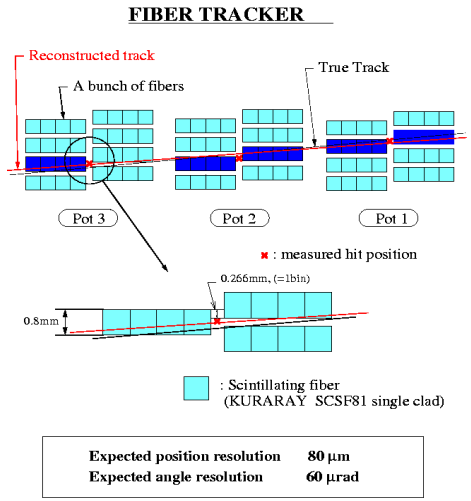
Roman Pot Spectrometer

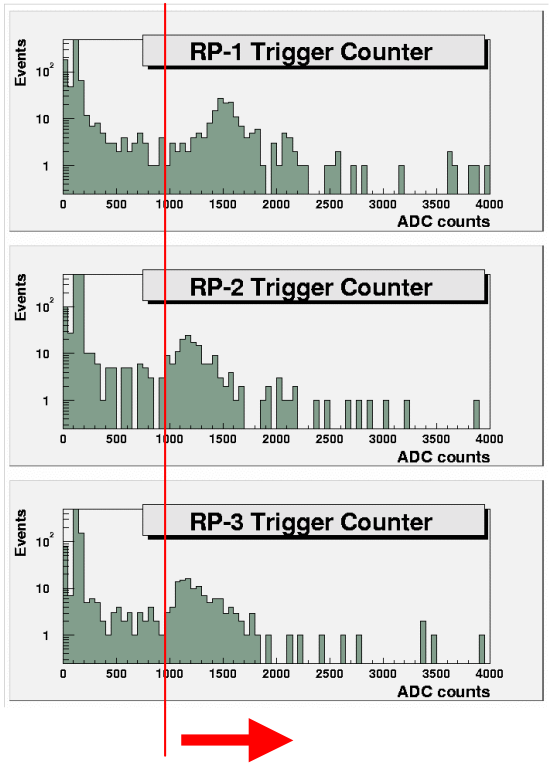
Fiber Tracker

- 3 stations
- 57 meters from IP





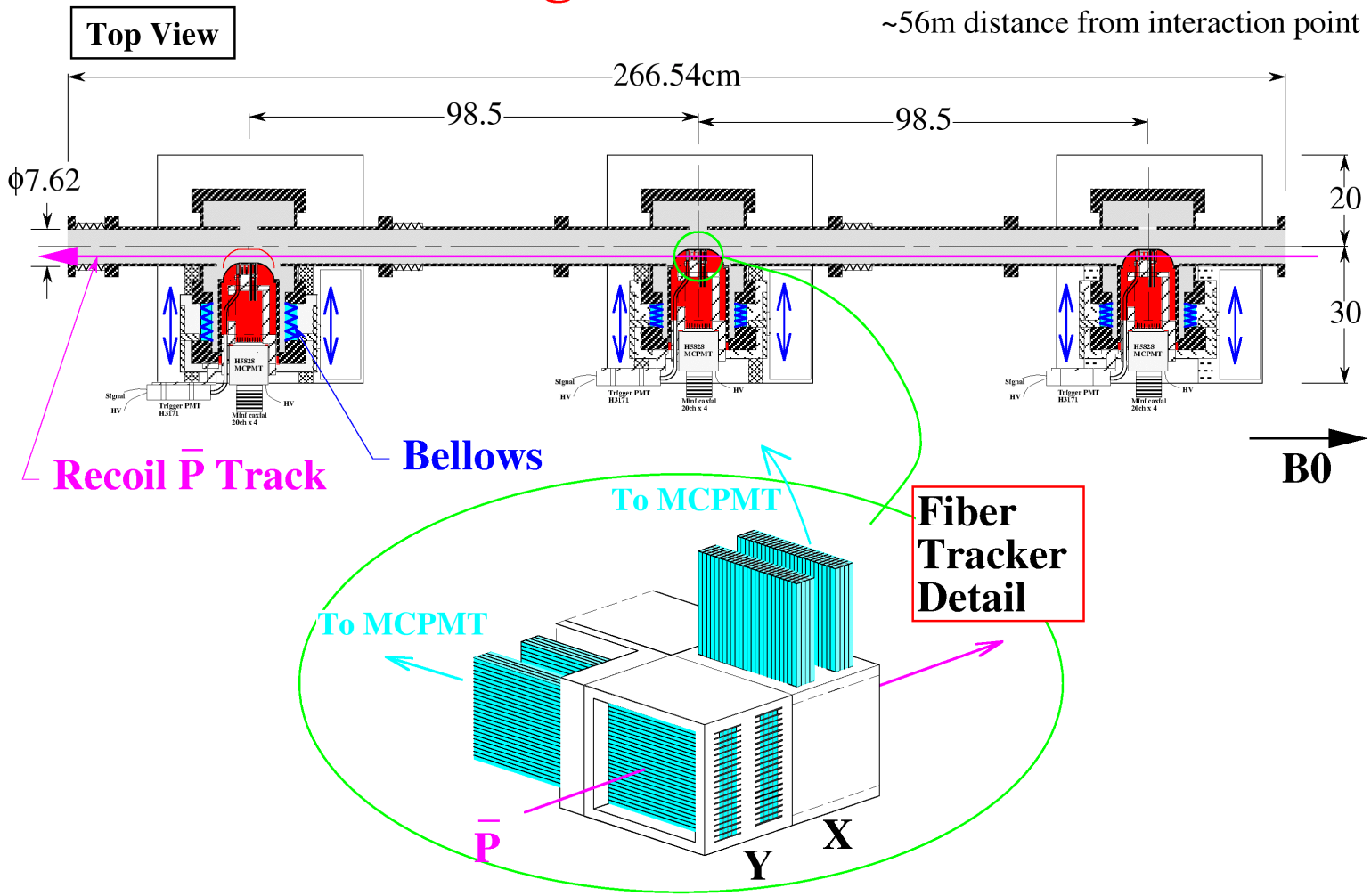


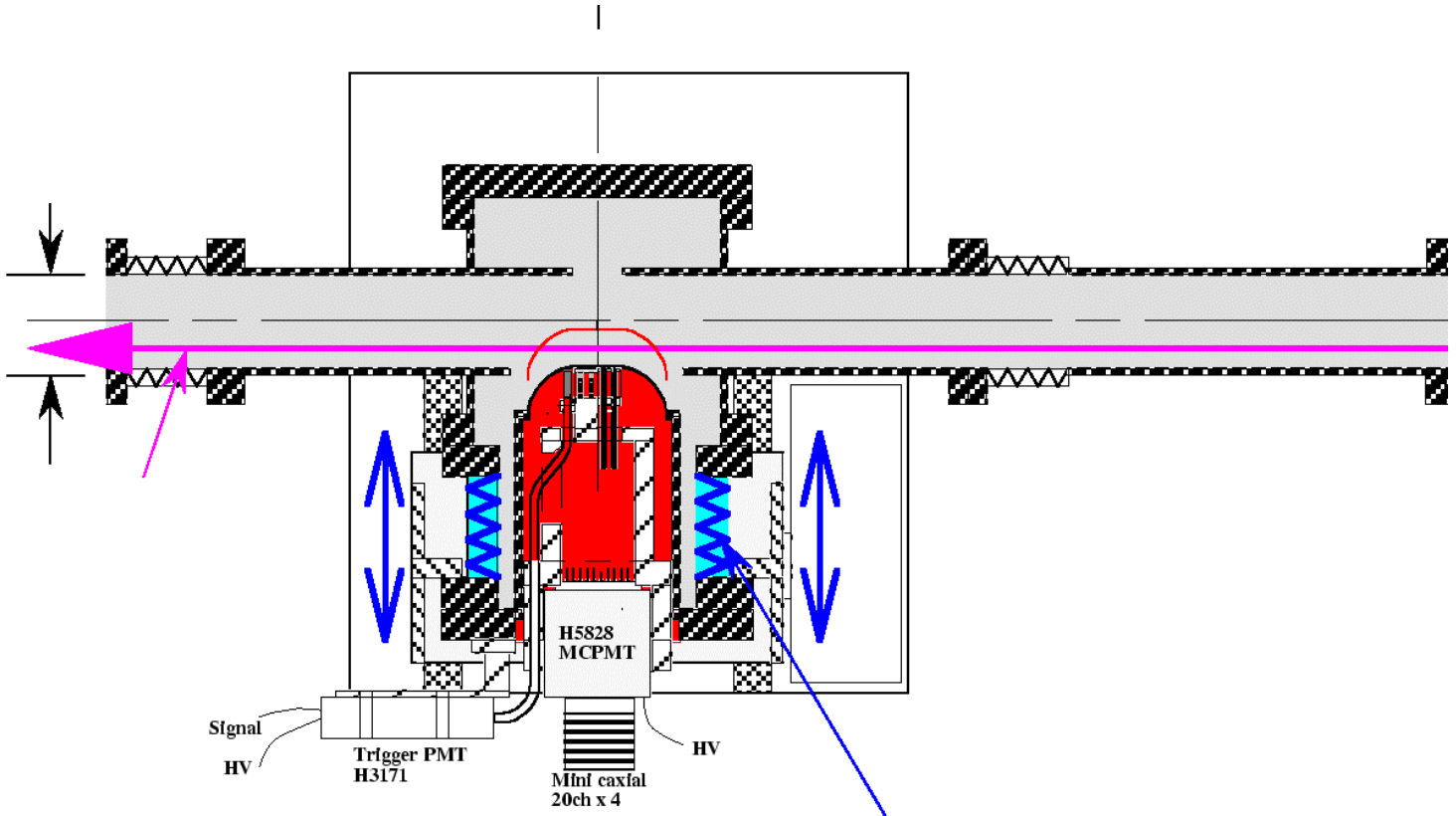


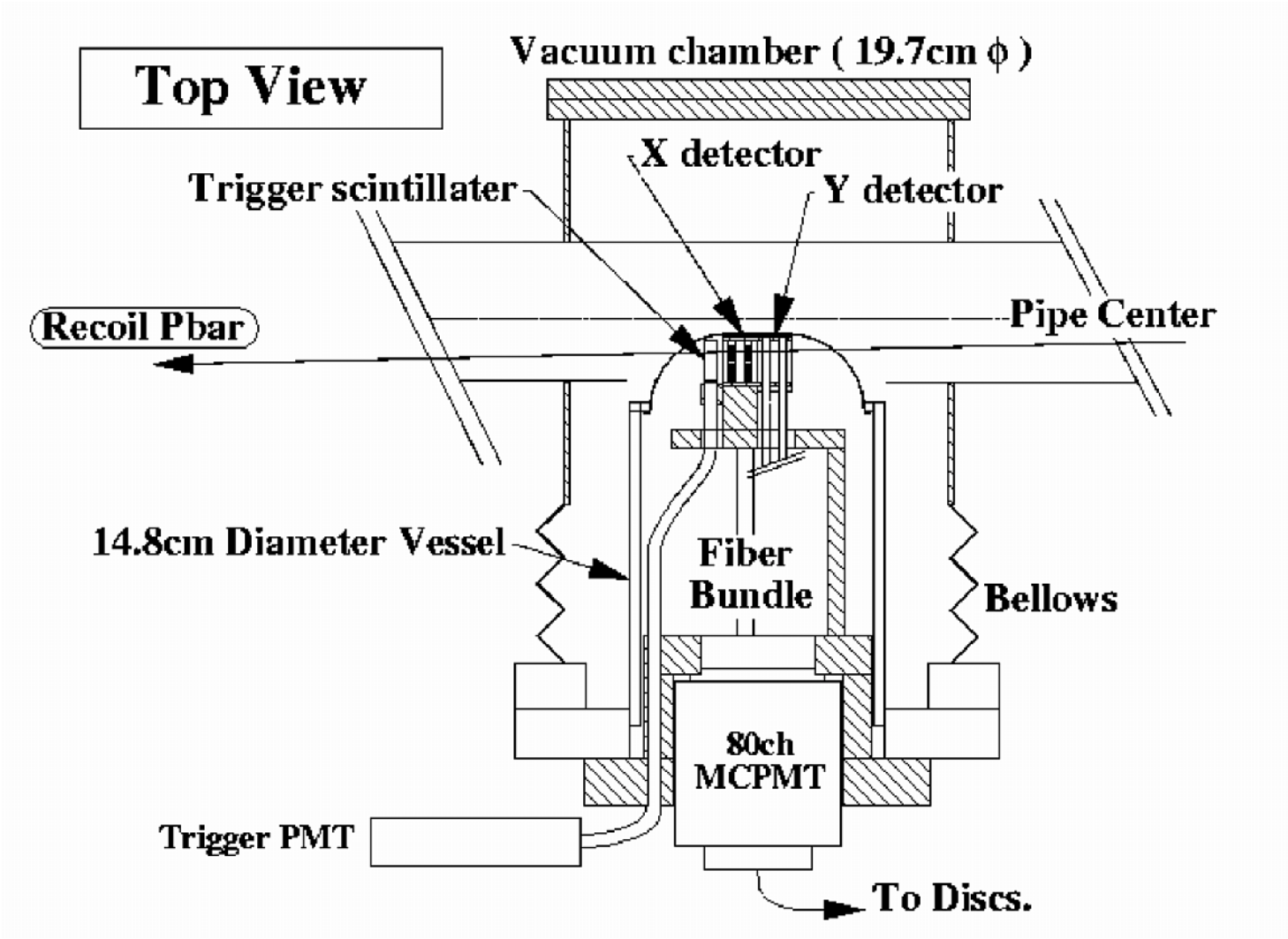
- 3 trigger counters
- 240 channels

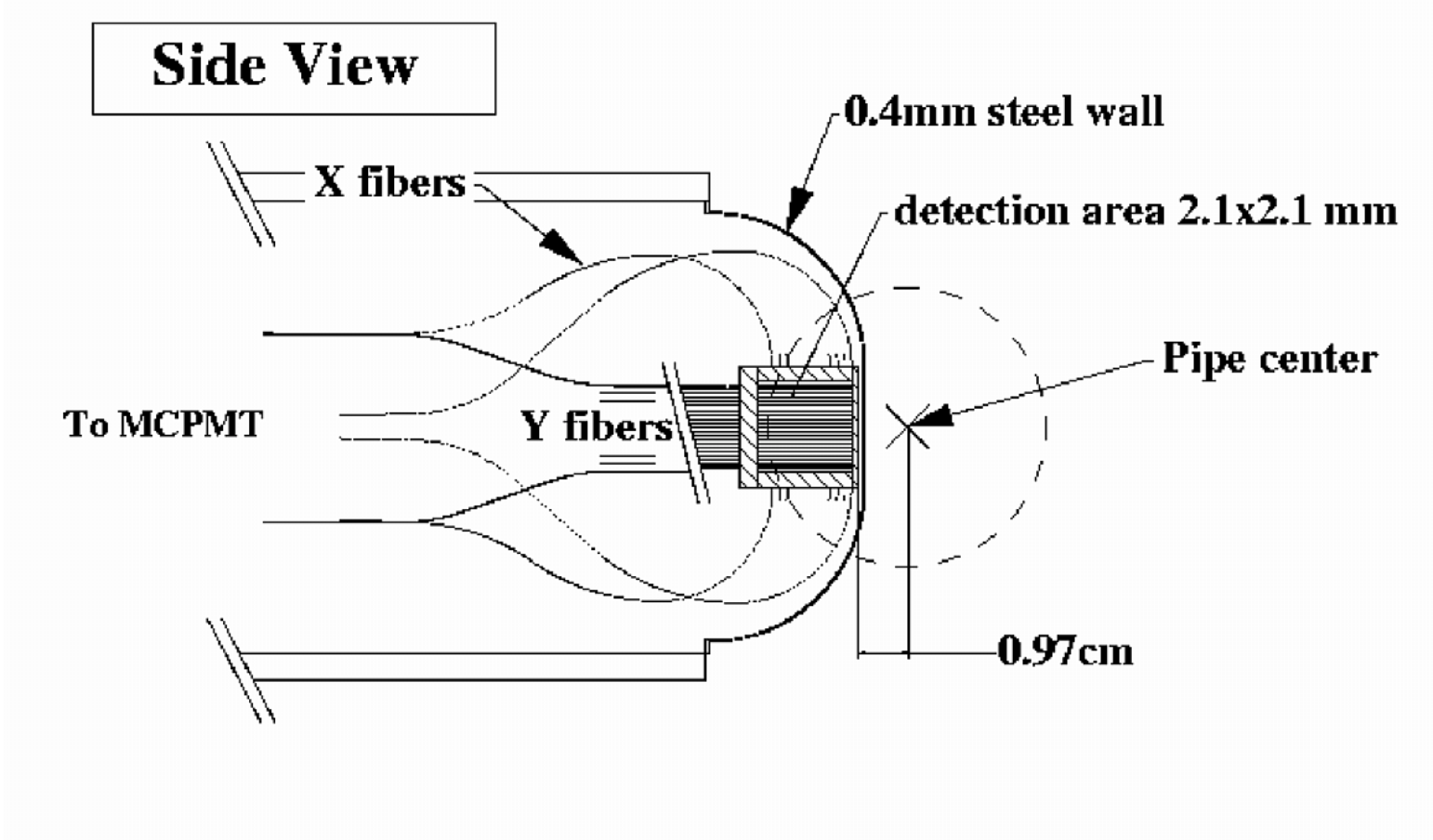
MIPs (>1000 counts)

Roman Pot Arrangement




H5828
MCPMT
Signal
HV
Trigger PMT
H3171
Mini caxial
20ch x 4
HV
Bellows


Top View
Vacuum chamber (19.7cm ϕ)
X detector
Trigger scintillater
Y detector
Recoil Pbar
Pipe Center
14.8cm Diameter Vessel
Fiber
Bundle
Bellows
80ch
MCPMT
Trigger PMT
To Discs.


Side View
0.4mm steel wall
X fibers
detection area 2.1x2.1 mm
Pipe center
To MCPMT
Y fibers
0.97cm